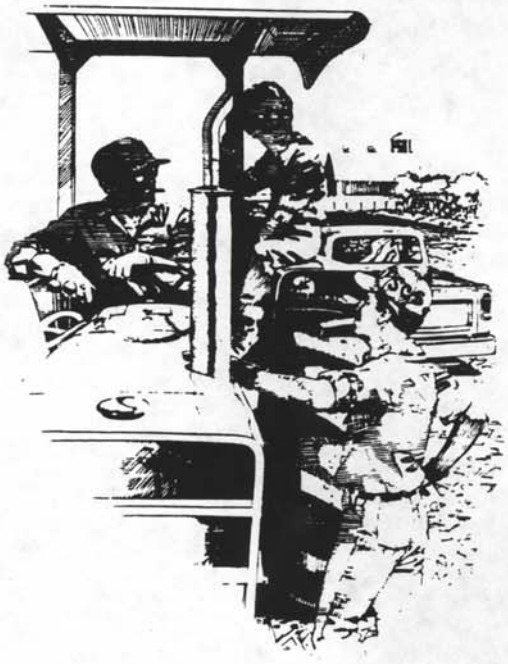
Section V-C

Procedural References



Guidance for the Development and Use of Case Studies as a Source of Conservation Effects Information

Purpose: To provide guidance to NRCS field office and conservation district employees in the collection and use of case study information. Case studies from representative resource problem situations should be stored in the Tech Guide, Section V-B-1, titled "Producer Experiences" for use in future planning efforts and training activities.

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Introduction

What are case studies and how can they be used?

A "case study" is an organized set of quantitative and qualitative information that describes before and after treatment resource conditions.

A case study is one example of how a recommended conservation treatment, such as a change in management, practice or system installed, actually worked out to meet cooperator objectives and effectively treat resource problems.

Case studies provide field offices and districts with a distinct means to improve on-going conservation planning. Sharing case study results with potential cooperators should also promote new conservation planning opportunities and accomplish additional levels of treatment.

Case studies developed by field office and district professionals are intended to be a relatively quick and practical means of providing potential cooperators in comparable resource situations with a vision of the way their current situation might be modified to achieve a desired resource condition. They are not intended to be definitive analyses of resource treatments which scientifically determine complete cause and effect relationships.

Thus, case studies to evaluate the effects of conservation should contain neither the degree of detail nor the rigor of analysis used in university level case studies. However, they should be much more insightful than casual observation and help us gain a better understanding of the ecological implications of change from current production systems to new systems based on conservation treatments.

"Before and after treatment" information allows for estimating change, but because exact cause and effect relationships between treatment inputs and conservation outputs (results) are difficult, and in some cases impossible to identify, **the expected focus of case studies should be on the results or outcomes of treatment**. Given that each cooperator's resource situation is unique, case studies should, at a minimum, describe successful treatment situations with some expectation for replicating the results. Unsuccessful treatments should also be noted so mistakes are not repeated.

Many end products can be derived from the development of case study information in addition to the case studies themselves:

- Brief information **brochures** containing highlights of the resource problems addressed, applied treatments, experienced effects, farmer satisfaction, etc.;
- Brief one-page **information sheets**, modeled after fact sheets;
- **Training materials** for instructing field and district professionals in planning and use of technical information;
- Local news and farm magazine **articles**; and
- Case study farms can be the focus of Soil and Water or Resource Conservation District **tours and training exercises**;

All of these products and uses could be part of public information campaigns and training to illustrate effective ways to evaluate and treat resource problems.

Potential problems to be aware of with Case Studies

Attributing change to a conservation treatment is potentially the most complex and uncertain aspect of NRCS case studies. Researchers do not like to predict results based on only one example. In fact, this is a weakness of using the case study approach

to predict the effects and impacts of conservation work.

However, that weakness does not destroy the usefulness of the approach. Examples of the potential problems with case studies that could complicate our understanding of the effects of conservation are:

- Variability in weather, e.g., unusually low rainfall during the growing season could cause yields to be lower than the levels expected when you planned the conservation system.

- Changes in management such as a change in varieties planted, fertilizer used or as a result of lessons learned during implementation, e.g., modifying tillage depth or timing;

- Measurement errors with respect to inputs, outputs or both;

- Some other factor might change between before and after treatment observations, e.g., biological or chemical changes in the soil which might solely be a function of time and be unrelated to the treatment, i.e., increasing salinity; and

- Significant statistical variation with respect to yields or any other measurable outcome can occur which may or may not be related to the treatment.

Paying close attention to details, objectivity in planning and collecting "after treatment" data, and experience in conducting such studies will help minimize errors.

In addition, data collected over several seasons will tend to minimize the impact of years with unexpectedly low or high responses to treatment.

Above all, you need to make it clear to subsequent farmers that "These are the results achieved on one of your neighbor's farms. We can't guarantee that you'll do the same, but we feel reasonably certain that comparable changes could be achieved. The exact magnitude of change most likely will be different, but should fall within some reasonable proximity to the case study results."

Are case studies mandatory?

Case studies are highly recommended as planning and public information tools, but they are not mandatory nor are there any required formats that must be followed if undertaken.

The examples attached to this guidance are meant to serve as format examples that may be utilized. (See Exhibits 1 and 2, "Conservation Effects Worksheet" and "Conservation Treatment Information")

Conservation effects information can come from a variety of sources such as university research, conservation field trials, and the expert knowledge of experienced planners within and outside of our agency as well as from case studies.

Case studies are simply another planning tool -- perhaps one of the most practical for improving our planning, for prioritizing assistance, and for reaching out to new farmers.

Some conservation practices and systems are so simple or easily understood that most of your farmers will not need case studies to reach a decision. Also, mandatory local ordinances regarding certain landuse activities may require specific practices such as sediment basins below irrigated fields, filter strips adjacent to water bodies, or nutrient management plans. Case studies might be very desirable in these situations, but they certainly are not mandatory.

The incorporation of conservation effects information into the FOTG is a long-term, dynamic endeavor with case studies being one effective means to develop representative effects information to aid farmers and ranchers in conservation decisionmaking.